EXECUTIVE SUMMARY

Introduction

This Water Supply System Management Plan (WSSMP) has been prepared as required under Rhode Island General Laws 46-15.3, as amended and titled "The Water Supply System Management Planning Act" (Act). The legislative authority to effectuate the goals and policies of this Act has been conferred to the Rhode Island Water Resources Board (RIWRB). To this end, the RIWRB has promulgated the Rules and Regulations for Water Supply System Management Planning, last revised in October 2002, as amended to implement the provisions of the Act.

Under this legislation, the Quonset Development Corporation (QDC), as a water purveyor supplying over 50 million gallons of water per year, is responsible for the preparation and adoption of a WSSMP. It is also required that the QDC update this WSSMP periodically, every five years, or as otherwise stipulated in the Regulations. This is the 2013 update of the current WSSMP approved by the RIWRB on May 16, 2008.

This WSSMP has been prepared to provide the proper framework to promote effective and efficient conservation, development, utilization, and protection of the natural groundwater resources of the State as utilized by the QDC. Further, the overall goals are consistent with State Guide Plan Element 721, "Water Supply Policies for Rhode Island". The purpose of this WSSMP is to outline the objectives of the Water Supply System Management Planning process for the QDC water distribution system, and to serve as a guide to employ the proper decision making processes.

The WSSMP has been prepared in three stand-alone volumes. Volume I contains a detailed description of the existing water system and includes the policies and procedures related to the general operation and management of the water system. Volume II, the Emergency Management section, relates to the vulnerability assessment of the water system for use in emergency planning. Volume III is an update of the 2003 Kent County and North Kingstown Source Water Assessment and Protection Plan for the QDC, which was completed in accordance with Version 3 of the Guide to Updating Source Water Assessments and Protection Plans, dated December 2010. The QDC shall implement the recommendations and procedures outlined in each volume of this WSSMP in order to comply fully with the overall requirements of the Act.

Source of supply is obtained from three (3) gravel packed wells. Well Stations #9A and #14A were installed in 1940 and Well Station #3A was installed in 1964. Collectively, these wells have a pumping capacity of approximately 4.2 million gallons per day (MGD). Source water is treated by the addition of potassium hydroxide (KOH) for pH adjustment, sodium hexametaphosphate for corrosion control, and sodium hypochlorite (NaOCL) for disinfection.

The transmission and distribution system consists of approximately 35 miles of active, in-service water mains ranging in size from 6 to 30 inches in diameter, most of which are cast iron or asbestos cement pipes that were installed in the 1940's. New and replacement main installations consist of polyvinyl chloride pipe or ductile iron. The QDC has endeavored to replace many aging water mains in recent years, particularly those considered most vulnerable. Also, close to 30 miles of water main located in undeveloped areas of the business park have been removed and/or abandoned.

Two (2) elevated steel storage tanks were constructed in 1998 and remain in service today. The tanks have a combined usable storage volume of 1.0 million gallons (MG), identified as the Devil's Foot Road Tank (0.25 MG capacity) and the Mooring Drive Tank (0.75 MG capacity). The system maintains a hydraulic grade of approximately 185 feet Mean Sea Level (MSL), which translates to system pressures in the distribution system within the range of 55-65 psi. The QDC supplies potable water and fire protection service to approximately 225 service accounts consisting of government, commercial and industrial customers. There are no residential customer accounts in the system.

The source and distribution system is 100 % metered. The QDC operations staff is responsible for the daily operation and maintenance of the water system, which also includes metering and billing of customers. Meter readings and billings are performed monthly across the entire service area. Water and sewer charges are combined onto one monthly bill. The revenues collected from customers support the operation and maintenance of the water system. There are three interconnections with neighboring water suppliers, specifically the Town of North Kingstown and the Kent County Water Authority (KCWA), which are in place for emergency purposes only and have not been used in recent years.

Approximately 8,800 people are currently served by the water system, which is comprised of

Water Quality Protection Component

Volume III of this WSSMP contains an Update of the 2003 Kent County and North Kingstown Source Water Assessment and Protection Plan for the QDC (SWAP Update). This SWAP Update was completed in accordance with Volume 3 of the Guide to Updating Source Water Assessments and Protection Plans, dated December 2010. The findings of the SWAP Update determined that there has been no change in the final risk rating for wells #3A, #9A, or #14A from 2003 to the present, as was the case from 2003 to 2007 in the previous SWAP Update.

The watershed of the Hunt Aquifer includes portions of the Towns of East Greenwich and North Kingstown and the City of Warwick. The groundwater of the Hunt Aquifer is a shared resource of the North Kingstown Water System (NKWS), the QDC, and the KCWA as a supply source for potable water. In 1988, a planning consortium now formally recognized as the "Hunt Wellhead Protection Area Plan Committee" (Committee), was developed to explore wellhead protection strategies in the aquifer system. Members of the Committee include the KCWA, the QDC, and the three municipalities referenced previously. The Committee hired GZA GeoEnvironmental, Inc. to prepare a formal Wellhead Protection (WHP) Plan, which was completed in 1995 and remains as the guiding document for shared use of the Hunt Aquifer.

In 2007 the QDC, KCWA, and the Town of North Kingstown coordinated the Hunt River Aquifer Water Supplier Action Plan (Plan), which was reviewed and accepted by the RIWRB. The plan details actions on the part of each supplier and recommendations/responsibilities on the part of the RIWRB/State of Rhode Island. The following provides an overview of the QDC's actions to date for the Plan.

- The QDC provides a conservation brochure to all of its users, educating the customer base with regards to water conservation and demand management.
- The QDC uses bill inserts and web postings outlining outdoor water use restrictions based on conditions as determined by the RIWRB drought steering committee.
- The QDC provided meeting space for the Watershed Stewardship Program, hosted several educational classes, and made financial contributions toward six watershed watch sites used to monitor the level and quantity of water in the Hunt River.

ANTICPATED FUTURE DEMANDS
QUONSET BUSINESS PARK

	5-Year Period (MGD)	20-Year Period [Full Build-Out] (MGD)
ADD	**0.80**	**1.7**
MDD	**1.75**	**2.4**

The 20-year planning period represents full build-out of the business park, with the 5-year period representing a liner progression in development from current conditions to full build-out. The 20-year projected ADD of 1.7 MGD is approximately 40% of the total capacity of QDC's supply wells (4.2 MGD). The 20 year projected MDD of 2.4 MGD is a little less than 60% of total capacity from the supply wells.

Supply & Demand Management

Four possible sources of alternative water supply available to the QDC have been identified, as follows:

- purchased water from neighboring utilities;
- surface water source development;
- additional groundwater source development; and
- desalination.

Purchased water through interconnections with neighboring utilities is possible with the NKWS and the KCWA. The QDC currently has emergency interconnections in place with both of these water suppliers. However, each of these systems rely on the Hunt Aquifer, as well as the broader HAP Aquifer system, for groundwater supply which is already stressed during dry conditions and periods of high demand. As such, development and permitting of a new well to increase supply would be difficult. With respect to development of surface water supply, there does not appear to be a suitable source available in proximity to the Quonset Business Park. Finally, the QDC

Implementation, Financial Management, and Coordination

This WSSMP details an implementation plan of infrastructure rehabilitation and improvements and reports and studies required by state regulations as well as through the Hunt River Aquifer Water Supplier Action Plan. The water system is considered to be in good condition and is in compliance with state regulations. Anticipated infrastructure improvements were identified in the Clean Water Infrastructure Replacement Plan (CWIRP) most recently updated by PARE on behalf of the QDC in 2012.

This WSSMP was developed in conjunction with reviews of both the North Kingstown and East Greenwich Comprehensive Plans. The QDC maintains close coordination with both towns as well as the KCWA and NKWS, two neighboring water suppliers. Further, the QDC's design review process includes input from state review agencies as well as the Town of North Kingstown to ensure municipal participation in development projects proposed within the business park. Land purchased in the business park is subject to review by the Town of North Kingstown. Also, the Town is given the opportunity to review Environmental Review Forms that are required components of any development project in the business park.